



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,688	06/27/2003	Masahiro Otsuka	204126-0085	7689

7590 07/17/2006

Perry J. Hoffman
Michael Best & Friedrich, LLC
Suite 1900
401 N. Michigan Avenue
Chicago, IL 60611

EXAMINER

MANAHAN, TODD E

ART UNIT	PAPER NUMBER
----------	--------------

3732

DATE MAILED: 07/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/607,688	Applicant(s) OTSUKA, MASAHIRO	
	Examiner Todd E. Manahan	Art Unit 3732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/3/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boutoussov et al. (United States Patent No. 6,439,888) in view of Adam et al. (United States Patent No. 6,419,483).

Boutoussov et al. disclose a dental curing apparatus comprising a light source which is an LED array 200 including a plurality of LEDs 210 arranged such that traveling directions of light rays emitted therefrom become the same direction. A guide member 140 guides the light rays to a predetermined position. A cooling fan 300 forcibly cools the LED array, the drive motor of the fan, and the LED drive circuit (see figure 2). Boutoussov et al. disclose the invention essentially as claimed except for the LED array being driven by a drive electric current larger than a rated electric current. Adam et al. discloses a dental curing apparatus having an LED array as the light source. The LED array is overdriven by supplying a current larger than the rated electric current to increase the intensity of the light emitted and provide faster curing (see col. 3, lines 2-9; col. 5, line 67 through col. 6, line 4). It would have been obvious to one skilled in the art to drive the LED array of Boutoussov et al. by a drive electric current larger than a rated electric current in view of Adam et al. in order to increase the intensity of the light emitted and provide faster curing.

Response to Arguments

Applicant's arguments filed 03 May 2006 have been fully considered but they are not persuasive.

In response to applicant's arguments that Boutoussov et al. does not disclose an LED array having the LEDs "arranged in said LED array in such a manner that traveling directions of light rays emitted by said respective LEDs become the same direction", applicant's attention is directed to Figure 2 which shows light rays 150 emitted by the LED array and becoming all in the same direction prior to entering the light guide 140.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Adam et al. clearly provides motivation for providing a drive current that is larger than the rated current. At col. 3, lines 2-9, Adams et al. state: "In particular, the invention involves overdriving a solid state light emitter to increase the intensity of the emitted light so that the dental material can cure at a faster rate" and at col. 5, line 67 through col. 6, line 4,

Art Unit: 3732

Adams further goes on to state: "Preferably, the electrical current provided to the light emitter 42 is sufficiently high to "overdrive" the light emitter 42, so that sufficient light flux is provided by the light emitter 42 to rapidly cure the dental material of interest." Thus one skilled in the art, upon reading Adams et al. would find motivation to "overdrive" the LEDs of Boutoussov et al. to increase the intensity of the light produced thereby and affect more rapid curing.

In response to applicant's arguments that the references do not disclose the spectrum set forth in claim 2, applicant's attention is directed to col. 4 line 45 of Boutoussov et al. which sets forth a spectrum of 300-650 nm which clearly encompasses applicant's spectrum of 370-480 nm.

In response to applicant's arguments that Boutoussov et al. does not disclose a "drive circuit" it is to be noted that such the LED array must inherently have an electric circuit with provides power to drive the LEDs, i.e. a "drive circuit". Such circuit includes wires 230 as well as substrate 272 which are forcibly cooled by fan 300.

In response to applicant's arguments regarding claims 5 and 6, applicant is merely setting forth how the predetermined time period is established which is used to establish the drive current. In that Adams et al. discloses "overdriving" LEDs with a drive current that is larger than the rated current, the process in which such current is determined is immaterial to the apparatus being claimed.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

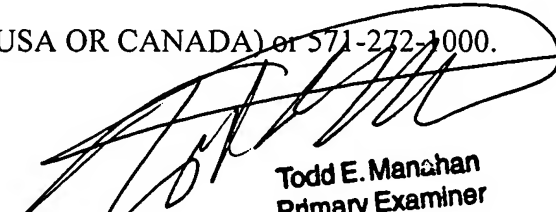
Art Unit: 3732

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Todd E. Manahan whose telephone number is 571 272- 4713. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on 571 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Todd E. Manahan
Primary Examiner